

Kents Hill School)
Kennebec County)
Kents Hill, Maine)
A-786-71-B-M)

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #1**

After review of the air emissions license minor revision application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Kents Hill School of Kents Hill, Maine was issued Air Emission License A-786-71-A-N on March 13, 2000 permitting the operation of emission sources associated with their school.

Kents Hill School has requested a minor revision to their air emission license to include a 500 kW emergency generator.

B. Revised Emission Equipment

Kents Hill School is licensed to operate the following equipment:

Fuel Burning Equipment

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Stack #</u>
Boiler #1	3.4	24.5	#2 fuel oil at 0.35%	1
Boiler #2	3.4	24.5	#2 fuel oil at 0.35%	1
Boiler #3	4.3	31.0	#2 fuel oil at 0.35%	2
Boiler #4	4.7	33.7	#2 fuel oil at 0.35%	2
Boiler #5	4.3	31.0	#2 fuel oil at 0.35%	3
Boiler #6	1.4	9.8	#2 fuel oil at 0.35%	4
Emergency Generator	4.9	35.5	#2 fuel oil at 0.35%	-

Bold depicts new equipment.

C. Application Classification

The modification of a minor source is considered a minor revision based on whether or not expected emission increases exceed the 4 tons per year of a single pollutant or 8 tons per year of all pollutants combined. The modification in this amendment does not exceed the levels of a minor revision. Therefore, this amendment has been determined to be a minor revision and has been processed as such.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in Chapter 100 of the Air Regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in Chapter 100 of the Air Regulations. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Emergency Generator

The Emergency Generator has an electrical output of 500 kW, which corresponds to an approximate heat input of 4.9 MMBtu/hr. The generator draws fuel from the same underground tank as the boilers.

BACT for the Emergency Generator is the following:

1. Emission limits for PM and PM₁₀ are regulated by MEDEP Regulations, Chapter 103.
2. MEDEP Chapter 106 regulates fuel sulfur content, however the use of 0.35% sulfur by weight fuel is BACT in this case.
3. SO₂ emission data was based on fuel sulfur mass balance.
4. NO_x, CO and VOC emission rates were based upon AP-42 data dated 10/96 for diesel engines larger than 600 hp.
5. An operational limit of 500 hours per year.
6. Opacity from the Emergency Generator shall not exceed 20% on a six- (6) minute block average basis, except for two (2) six (6) minute block averages in a 3-hour period.

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C. Revised Facility Emissions

Kents Hill School has the following annual emissions, based on operating the Emergency Generator 500 hours per year and firing the remainder of the 200,000 gallons of #2 fuel oil (0.35% sulfur maximum) in the boilers (12 month rolling total):

Annual Emissions for the Facility
(used to calculate the annual license fee)

Pollutant	Boilers TPY	Generator TPY	Total TPY
PM	1.5	0.2	1.7
PM ₁₀	1.5	0.2	1.7
SO ₂	4.5	0.5	5.0
NO _x	4.5	3.9	8.4
CO	0.5	1.1	1.6
VOC	0.1	0.1	0.2

ORDER

The Department hereby grants Air Emission License Minor Revision A-786-71-B-M, subject to the conditions found in Air Emission License A-786-71-A-N, and in the following conditions:

The following replaces Condition (16) license A-786-71-A-N:

(16) Boilers #1-#6

A. Emissions from Boilers #1 and #2 each shall each not exceed the following:

Pollutant	lb/MMBtu	lb/hr
PM	0.12	0.41
PM ₁₀	n/a	0.41
SO ₂	n/a	1.20
NO _x	n/a	1.20
CO	n/a	0.14
VOC	n/a	0.03

B. Emissions from Boilers #3 and #5 each shall each not exceed the following:

Pollutant	lb/MMBtu	lb/hr
PM	0.12	0.52
PM ₁₀	n/a	0.52
SO ₂	n/a	1.50
NO _x	n/a	1.50
CO	n/a	0.17
VOC	n/a	0.04

C. Emissions from Boiler #4 shall each not exceed the following:

Pollutant	lb/MMBtu	lb/hr
PM	0.12	0.56
PM ₁₀	n/a	0.56
SO ₂	n/a	1.70
NO _x	n/a	1.70
CO	n/a	0.19
VOC	n/a	0.05

D. Emissions from Boiler #6 shall each not exceed the following:

Pollutant	lb/hr
PM	0.17
PM ₁₀	0.17
SO ₂	0.49
NO _x	0.50
CO	0.06
VOC	0.01

E. Visible emissions from stacks #1, #2, #3 and #4 shall each not exceed 20% opacity based on a six (6) minute block average basis, except for no more than one (1) six (6) minute in a 3-hour period.

The following are new conditions to license A-786-71-A-N:

- (18) Kents Hill School shall be limited to a facility wide annual fuel use limit of 200,000 gallons of 0.35% sulfur #2 fuel oil, based on a 12 month rolling total. Compliance is based on fuel receipts from the supplier showing the quantity of fuel delivered as well as the percent sulfur of the fuel.
- (19) Emergency Generator
- A. The Emergency Generator shall be limited to 500 hours per year of operation, based on a 12 month rolling total. An hour meter shall be maintained and operated on the unit.
 - B. A log documenting the dates, times and reasons of operation for the generator shall be kept.

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C. Emissions from the Emergency Generator shall not exceed the following:

Pollutant	lb/MMBtu	lb/hr
PM	0.12	0.59
PM ₁₀	n/a	0.59
SO ₂	n/a	1.75
NO _x	n/a	15.68
CO	n/a	4.17
VOC	n/a	0.49

D. Visible emissions from the Emergency Generator shall not exceed 20% opacity on a six- (6) minute block average, except for no more than 2 six-minute block averages in a 3-hour period.

(20) Kents Hill School shall pay the annual air emission license fee within 30 days of **March 30th** of each year. Pursuant to 38 MRSA §353-A, failure to pay this annual fee in the stated timeframe is sufficient grounds for revocation of the license under 38 MRSA §341-D, subsection 3.

(20) This amendment shall expire concurrently with Air Emission License A-786-71-A-N.

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2003.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAWN R. GALLAGHER, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: April 23, 2003

Date of application acceptance: April 28, 2003

Date filed with the Board of Environmental Protection: _____

This Order prepared by Mark E. Roberts, Bureau of Air Quality